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ABSTRACT

One of five modules in the curriculum development series designed to train vocational education curriculum specialists, this module is intended for use in classes or individual study arrangements at the preservice or inservice level by students with varying amounts of experience in vocational education. (These modules are revised versions of earlier study guides--see note.) Introductory materials include an overview, instructions to the learner, detailed list of behavioral goals and objectives, and resources needed to complete learning activities. The module is divided into four sections, each based on one of the goals. Section 1 explains how a vocational needs assessment contributes to the curriculum development process. Focus of Section 2 is on techniques for conducting labor needs analyses. The third section then examines techniques for identifying student needs. The final section shows how needs assessment information can be used to propose new or improved vocational programs. Each section follows a standard format: text, individual study activities, discussion questions, and group activities. A summary of the module follows. A concluding activity and carrier project are provided here. Appendixes include suggested responses to the study activities, a self-check, responses to the self-check, and recommended references. (YLB)

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VOCATIONAL EDUCATION CURRICULUM SPECIALIST

VOCATIONAL NEEDS ASSESSMENT AND CURRICULUM DEVELOPMENT

Module 7

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
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VOCATIONAL NEEDS ASSESSMENT AND

CURRICULUM DEVELOPMENT

Module 7

Judith A. Appleby

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Table of Contents

	Page
Introduction.	7
Overview	9
Instructions to the Learner	10
Goals and Objectives	11
Resources	12
Goal 1	13
Vocational Needs Assessment and the Curriculum Development Process	15
The Needs Assessment Process	15
Curriculum Goals	16
Scope of the needs assessment process	17
Labor Needs Analysis	18
Student Needs Analysis	18
Confidentiality	18
Individual Study Activity	20
Discussion Question	20
Group Activity	20
Goal 2	21
Techniques for Identifying Labor Needs	23
Employer Surveys	23
Econometric Studies	27
Job Vacancy Studies	28

Page

Extrapolation of Trends Surveys 29

Literature Surveys 29

Occupational Outlook Handbook 29

Occupational Outlook Quarterly 29

National Planning Association 30

Employment and Training Report of the President . 30

Dictionary of Occupational Titles 30

State employment services 30

Press, government, and private listings of employment opportunities 31

Conclusions 31

Individual Study Activities 32

Discussion Questions 36

Group Activities 37

Goal 3 39

Techniques for Identifying Student Needs 41

Determining Population Preferences 41

Monitoring phone requests and inquiries 41

Following-up on withdrawals and dropouts 42

Conducting a follow-up study of program graduates 43

Conducting an interest survey 45

Analyzing Student Preferences 48

Individual Study Activities 49

Page

Discussion Questions 50

Group Activities 50

Goal 4 51

Proposing a New or Improved Vocational Education Program . 53

Occupational Description and Rationale for Program . . 54

The Employment Picture 54

Current Status of Vocational Program 54

Economic Considerations 55

Personnel Considerations 55

Work Experience Considerations 56

Health and Safety Considerations 56

Union and Community Attitudes 57

Individual Study Activity 58

Discussion Questions 60

Group Activity 60

Summary 63

Concluding Activity 65

Carrier Project 75

Appendices 77

Individual Study Activity Responses 79

Self-Check 83

Self-Check Responses 85

Recommended References 89

INTRODUCTION

Introduction

The purpose of this module is to discuss the activities involved in conducting a vocational needs assessment. Accurate identification of educational needs is a recognized prerequisite for sound curriculum planning and development. A local district must develop one- and five-year plans that describe present and future needs, and submit a plan for fulfilling those needs. Assessment of human and occupational needs provides data needed for identification of vocational program goals, development of curricular procedures, implementation of program innovations, and evaluation of program outcomes. After completing this module, the curriculum specialist should be able to identify and analyze appropriate data from various sources for use in curriculum planning.

Overview

This module is based on the assumptions listed below.

- Needs assessment is a continuous process that is carried out before, during, and after the development of vocational education curricula.
- There are many good systems for conducting needs assessments.
- Considerable needs assessment data are gathered by local, state, and national agencies, and these are readily available.
- Successful needs assessment surveys require representative participation of all groups affected by proposed curricular changes.
- The conduct of local needs assessment surveys is primarily an administrative responsibility, but the vocational education curriculum specialist requires sufficient background to assess needs identified during continuous evaluation of the curriculum.
- The assessment of needs for vocational education programs must focus both on present needs and projected needs.
- Systematic collection or utilization of existing data for needs assessment is not merely a mechanical

activity, but a humanistic function requiring sensitivity, insight, and patience on the part of the curriculum specialist.

This module provides information, activities, and experiences that will help the curriculum specialist in planning and implementing an assessment of curriculum development needs.

After providing an overview of the needs assessment process, the module discusses how labor needs might be assessed. As a part of this discussion, the module looks at various sources of employment data and provides students with an opportunity to use the best of these sources. The module next examines techniques for identifying student needs. The monitoring of phone requests and inquiries and the use of student surveys are discussed here.

The final module goal shows how information gathered from the needs assessment process can be used to propose a new or improved vocational program.

Instructions to the Learner

Before you begin this module, read the "Carrier Project" section included in the Summary. This project will be developed as you progress through this module and the modules on conducting task analyses and developing instructional objectives, selecting instructional strategies and assessing student achievement, and selecting and preparing instructional materials.

The Self-Check items and possible responses to them are found in the appendices. These questions have two purposes. First, before you begin work on the module, you may use them to check quickly whether you have already learned the information in previous classes or readings. In some instances, with the consent of your instructor, you might decide to skip a whole module or parts of one. The second purpose of the Self-Check is to help you review the content of modules you have studied in order to assess whether you have achieved the module's goals and objectives.

You can also use the list of goals and objectives that follows to determine whether the module content is new to you and requires in-depth study, or whether the module can serve as a brief review before you continue to the next module.

Goals and Objectives

Goal 1: Explain how a vocational needs assessment contributes to the curriculum development process.

Objective 1.1: Provide a definition of and rationale for the needs assessment process.

Objective 1.2: Describe the components of a vocational needs assessment.

Objective 1.3: Describe the scope of the needs assessment process.

Goal 2: Utilize techniques for conducting labor needs analyses.

Objective 2.1: Explain the importance of a labor needs assessment to the curriculum development process.

Objective 2.2: Describe how employer surveys are conducted and used in vocational education.

Objective 2.3: Describe how econometric studies are conducted and used in vocational education.

Objective 2.4: Describe how job vacancy surveys are conducted and used in vocational education.

Objective 2.5: Describe how trends surveys are conducted and used in vocational education.

Objective 2.6: Identify various sources of national, regional, state, and local labor data for planning vocational programs.

Goal 3: Utilize techniques for identifying student needs.

Objective 3.1: Explain the importance of a student needs assessment to the curriculum development process.

Objective 3.2: Describe at least three ways to obtain data on student needs.

Objective 3.3: Describe how to conduct a survey to determine student vocational interests.

Goal 4: Utilize techniques for proposing a new or improved vocational program.

Objective 4.1: Provide basic information for proposing a new vocational program, including a description of the occupation, a rationale for the program, and suggestions for sources of additional information about the occupation.

Objective 4.2: Describe the employment potential and projection related to a specific vocational program.

Objective 4.3: Describe the present status of the vocational program in terms of its goals and objectives.

Objective 4.4: Describe the economic considerations related to the vocational program.

Objective 4.5: Describe the personnel considerations relevant to program development.

Objective 4.6: Describe the work experience considerations relevant to program development.

Objective 4.7: Describe the health and safety hazards associated with the occupation.

Objective 4.8: Describe any planning considerations related to unions and community attitudes regarding the vocational program.

Resources

In order to complete the learning activities in this module, you will need information contained in the following publications:

Dictionary of occupational titles. Bureau of Labor Statistics, U.S. Department of Labor.

Employment and training report of the President. U.S. Department of Labor, published yearly.

GOAL 1: Explain how a vocational needs assessment contributes to the curriculum development process.

Vocational Needs Assessment and the Curriculum Development Process

Vocational program planning must begin with an analysis of the labor needs of business and industry and an analysis of student needs and interests. This section provides an overview of the needs assessment process and gives special attention to the assessment of student and labor needs.

The Needs Assessment Process

Needs assessment refers to the process of establishing what should be, determining what is, measuring the difference between the two, and reporting the resulting needs in priority order. Needs assessment is based on a discrepancy model which may be displayed as follows:

- What should be is the desired, preferred, or required behavioral outcome for the population on which the needs assessment is being conducted.
- What is can be defined as the assessment population's current behavior with respect to the desired outcome.
- A need is identified when the two sets of information above are compared and a discrepancy exists.

Some school district personnel have asked why they should complete a needs assessment. They feel that they know what their needs are. They need smaller classes, new equipment, or the latest textbook. These educators are solution-oriented, not problem-oriented. It is very easy to propose a solution, but a solution to what problem?

Needs assessment is the process by which problems are identified. By conducting a needs assessment, it may be found that students applying for welding jobs from a particular school are at a disadvantage because they have not learned to use the latest equipment. If this were the case, the needs assessment would identify the extent of the problem, the types of students who were affected, and other pertinent facts. Only when the needs assessment was completed could the problem really be identified. Later the acquisition of additional equipment or the purchase of a new textbook might be selected as the "best" alternative solution.

Curriculum Goals

A properly conducted vocational needs assessment provides information required to establish realistic curriculum goals. Although persons who have contributed to the literature on needs assessment may differ to a small degree on the specifics of a goal statement, they usually agree that goals should identify:

- the student target population exhibiting the need,
- the behavior in which the discrepancy exists, and
- the amount of deficit to be overcome.

The example below shows how a goal statement might be derived from an analysis of what should be and what is.

- What should be: Prior to graduating from high school, all 12th grade students in the vocational education program should be performing the basic computational skills at or above grade level on a standardized achievement test.
- What is: As of June 30, the year before 12th grade graduation, standardized achievement test results indicated that 390 students, or 65% of the 600 students in the 11th grade, performed at or above grade level on basic computational skills.
- Discrepancy: 210 or 35% of the students were not performing at or above grade level in computational skills.
- Goal: By 12th grade graduation, the 210 students who did not perform at or above grade level in computation skills will do so using a standardized achievement test.

Once you have derived goals from the needs assessment process, you must determine which goals you will attempt to meet. Each group has its own formula for determining which goals should receive top priority. When determining criteria, you might wish to consult:

- state employment service surveys,
- state and national advisory committee reports,
- district and state program planning guides, and
- manpower forecasting data.

Listed below are frequently used criteria for determining which educational goals should be addressed, and in what order they should be addressed.

- Is funding available to support the goal?
- Is equipment available to support the goal?
- Are teachers available to carry out the goal?
- How widespread is the problem addressed by the goal?
- How crucial is the problem to the student?
- What are the community's desires?
- Are business and industry committed to meeting this goal?
- Is the occupation sufficiently stable to warrant expenditure of public funds for a training program?
- Will training serve a large area of the economy?
- What are the legislative implications of addressing this goal?

Scope of the needs assessment process. There is general agreement that needs assessment is a continuous process and that to be effective it must involve people with varied expertise. In addition, the needs assessment process can be conducted at a number of levels. A needs assessment of broad scope might be at the state or regional level. For instance, a state considering the establishment of area vocational schools will conduct a needs assessment for the entire state and for all aspects of

the proposed curricula. At the other extreme, one vocational teacher in a single school might want to conduct a needs assessment before establishing a new vocational program.

Labor Needs Analysis

Since the Smith-Hughes Act of 1917, vocational training of workers has been designed to meet labor needs. The Vocational Education Act of 1963 and the 1968 and 1976 amendments state that training shall be provided "which is realistic in the light of actual or anticipated opportunities for gainful employment." Labor needs analysis need not, however, be limited to a local geographic area. As long as there are existing jobs and students willing to travel, preparation for those jobs should be considered by curriculum planners.

Labor needs analysis provides comprehensive, systematic, and continuous information on available and emerging job opportunities. It may provide local, regional, or national data. Techniques such as surveys, econometric studies, and extrapolation of trends can be used to gather labor needs data. These techniques are discussed in depth in Goal 2 of this module.

Student Needs Analysis

Curriculum specialists charged with preparing students for the world of work must ultimately consider the self-fulfillment needs of students. These specialists will want to use student needs analysis to obtain and maintain student data that will provide the information necessary for planning vocational education programs. Such data may include students' vocational interests, needs, skills, and learning or physical disabilities. Surveys of student needs should help curriculum specialists determine what students, parents, and taxpayers in the community want to study; which occupations they aspire to; and how instruction should be made available. Goal 3 of this module discusses techniques for assessing student needs.

Confidentiality

Whether you are collecting information from students, employers or other community members, it is important to respect the confidentiality of your source. You must inform those people from whom you are gathering information that they are not required to participate in your data collection effort. Additionally, you will need to conceal the identity of those who participate in your study. You should consider storing all

data in a locked file cabinet, presenting only grouped data in your published reports, filing information by ID number rather than by name, and destroying all data once it has served its purpose.

Individual Study Activity

1. Write a two-page paper, using your own experiences in vocational education, to discuss examples of curriculum planning based on a needs assessment that was limited in scope and on one that was broad in scope. From your present knowledge of needs assessment, speculate on how the scope of a needs assessment might alter the process.

Discussion Question

1. Do you believe that labor needs or student needs should receive the most consideration when developing a new curriculum?

Group Activity

1. Divide the class into dyads (two students per dyad). Using any available references on curriculum development, each dyad will outline a 5-7 minute presentation on the needs assessment process. The presentation should include the following components:

   - an operational definition of needs assessment, and
   - an explanation of the importance and place of needs assessment in the curriculum development process.

   The presentations should be suitable for delivery to one of the following audiences: vocational administrators, vocational teachers, parents, business and industry advisory groups, students, or school board members.

GOAL 2: Utilize techniques for conducting labor needs analyses.

Techniques for Identifying Labor Needs

One of the major considerations when selecting and justifying vocational programs is information about labor market needs, including labor supply and demand. Labor supply information provides an indication of the number of individuals available in the labor market with a particular skill. Labor demand information indicates the number of individuals with a particular skill that are needed in the labor market.

The comparison of labor supply and demand information provides information on labor needs that can be used to determine what vocational programs may be needed or no longer needed in a given geographical area.

There are five general ways of identifying labor needs. They are employer surveys, econometric techniques, job vacancy-occupational outlook surveys, extrapolation of trends, and literature surveys. These techniques are discussed below.

Employer Surveys

The employer survey is a technique for determining local-regional labor needs and opportunities. The surveyors identify from 50 to 150 occupations that employ a relatively large number of persons in the area. After identification, employers are surveyed to determine their current labor needs and their expected needs two years and five years in the future.

The employer survey is the technique most used by vocational administrators since it is relatively easy to administer, is inexpensive, and is quickly implemented. The reliability and validity of employer responses may be questionable, however, since many firms do not do the planning necessary to project their own needs with any degree of accuracy. On the other hand, one often overlooked advantage of the employer survey is the resulting involvement of local employers in curriculum planning.

You will find the following steps useful when conducting an employer survey to determine labor needs.

- Identify a group or committee to assist in planning and executing an employer survey--preferably composed of people with an interest in and use for the survey results. The individuals you select as members of the committee should be knowledgeable about the community's businesses, industries, and agencies. The following are possible groups (or combinations of groups) you may wish to involve:

  (1) a committee of vocational education leaders (directors, department chairpersons, etc.) from all of the schools in the area or region to be surveyed;

  (2) a committee composed of representatives from each of your on-going specialized advisory committees;

  (3) a general advisory committee with broad representation from all segments of the community--both labor and management.

- Meet with the committee you select to establish a plan for completing the survey.

- Select a director who has the time and background to administer the study and write the final report.

- Discuss with the committee the assignment of tasks to individuals or subcommittees and discuss projected deadline dates.

- Outline on a map the region or geographic area within which your comprehensive survey will be conducted.

- Prepare a listing of the businesses, industries, and agencies within the geographic area. This list should include both labor users and suppliers of trained personnel. Obviously, some organizations will fall into both categories. For example, a business having a formal training program for a given job classification would be both a supplier of labor and a user of labor. In completing this step, your committee can be of great assistance. In addition, the following documents may be consulted:

  (1) Yellow pages of the telephone directories in the geographic area to be surveyed

(2) Directories of manufacturing associations and the Chamber of Commerce

(3) Listing of organizations and agencies contacted by the United Way

- Determine the technique(s) to be used for data gathering. The three most popular techniques are:

  (1) personal interviews,

  (2) mail surveys, and

  (3) telephone surveys

- Develop a timetable for completing the survey.

- Design the instrument(s) to be used to survey labor users and suppliers in order to obtain local labor supply and demand information.

- Have your committee review the instrument(s). Committee members will often have valuable suggestions for improving instruments in order to ensure proper interpretation of questions.

- If data processing services can be obtained for tabulating the survey responses, the instrument(s) should be reviewed with data processing personnel. This will ensure proper coding of the items for keypunching.

- Complete revisions in the survey instrument(s) you intend to use.

- A small sample of organizations and agencies should be selected for pretesting the instruments and for providing experience to the data collectors. On the pretest ask the respondents to indicate if any questions are unclear or if it is difficult to answer any questions.

- Analyze the pretest data to determine whether you are obtaining valid and reliable data.

- Revise the instrument(s), if necessary, on the basis of pretest results.

- Conduct the survey using one of the following methods:

(1) Personal Interview Method

Conduct an orientation for interviewers. Written procedures will need to be prepared and used by all data collectors to ensure reliable and valid responses.

(2) Mail Survey Method

If a mail survey is to be used, a cover letter on letterhead stationery should be sent along with the survey to the different businesses. The letter should be co-signed by the director of vocational programs and perhaps by the chairperson of your committee. Enclose a self-addressed, stamped envelope with the survey.

(3) Telephone Survey Method

The telephone survey may be used for obtaining concise information for a specific occupational area. This method is very limited in use and is not usually appropriate for a comprehensive survey.

- Analyze and report the data to the survey committee. In analyzing and reporting the data, the following should be done:

(1) Describe the procedures used in completing the survey, including:

a. committees utilized,

b. sample surveyed,

c. survey technique used, and

d. why the survey was conducted.

(2) Describe the findings of the report, including:

a. the number of concerns surveyed,

b. the number and percentage of returns or responses,

c. the number of usable and unusable returns, and

d. the tabulation of responses to each question on the survey instrument.

(3) Consider the following points when analyzing the data and reporting the conclusions and implications of the study:

a. A rapid reversal in the need for trained personnel can occur with even minor changes in the level of the economy, particularly in technical fields supporting the production of consumer goods. In the human or personal services area, there is less fluctuation in labor needs when the overall level of the economy changes; thus, demands are more predictable. If there is a discrepancy between national and local data, and if you know that your local survey is valid, put your stock in the local survey.

b. Not all graduates who are trained are immediately available for placement in related jobs within the boundaries of the district. Many migrate to other districts or states, enter the Armed Forces, continue in school, or completely withdraw from the labor force and do not accept employment.

c. Certain people within a district migrate to obtain employment; this factor must also be considered in determining supply.

d. Not all enrollees in a program complete the program and graduate. Those enrollees who fail to complete the training program and depart without graduating may or may not be used as a source of labor supply; therefore, the number of enrollees required to satisfy the needs requirement is a matter of interpretation.

Econometric Studies

Econometric studies are more sophisticated and dependable than employer surveys, but for the most part they are too complicated, time-consuming, and expensive for the typical vocational education curriculum specialist to conduct. Econometric studies are conducted by the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor. The BLS econometric approach

yields a national ten-year demand analysis based on projections of population, labor force, productivity, consumption, and overall output that provides estimates of new openings by occupation. These estimates can be obtained from the U.S. Department of Labor and should be consulted when developing new curriculum.

There are disadvantages, or at least limitations, with this technique also. Accuracy is a problem since it is hard to forecast economic activity, technological change related to productivity, and needs that change due to labor and capital mobility in given market areas. Also, the statistics are national and may not be entirely useful for local or regional planning.

Many have suggested that the BLS model for econometric studies be adopted by state and regional planning departments. Although valid use of this model requires extensive knowledge of labor economics and statistics, its implementation would be effective in providing local data regarding labor needs.

Job Vacancy Studies

The job vacancy approach expands the econometric model by adding local input. It combines data from the BLS with an analysis of the local employment listings of unfilled job openings. Jobs unfilled for 30 days are compared with national trends. This analysis results in a priority listing of jobs with apparent shortages of workers, which the educator must then analyze in terms of probable persistence of the shortage, trainability of potential job holders, and the cost benefit return of training workers for the job.

The job vacancy approach is relatively inexpensive; it can be programmed on a local/regional basis, results in an up-to-date record of trends, and can be implemented by the local vocational educator.

The disadvantages are apparent. The approach deals with present needs and not necessarily with either long-term or future needs of the community or the interests of students. It is also static--it does not predict the future growth of present or new industries. However, job vacancy studies cannot be ignored and should be conducted by all vocational curriculum planners.

Extrapolation of Trends Surveys

Another approach to labor needs forecasting is that of extrapolation. This technique attempts to forecast future needs on the basis of past trends. It may be done on a local/regional, statewide, or national basis. The advantage of this type of survey is that extrapolation is relatively quick, easy, and inexpensive. The disadvantages of the technique are critical and limit its value. With the explosion in technological knowledge and the rapid changes in production patterns and occupational requirements, the predictive validity of extrapolation becomes more questionable the further it is extended into the future.

This process (looking at past trends to predict future needs) is best used only as a starting place. Consider past labor needs, for example, as merely a way of selecting those industries you will survey or study to determine future labor needs. But don't expect past labor needs to be repeated either in quantity or in type of skill and occupation required. The only situation in which the extrapolation of past trends can be useful is in short-term predictions.

Literature Surveys

Literature surveys are the basis for almost all studies to determine labor needs. A wealth of information is reported in newspapers and professional journals: the needs of industries, new developments in technology, new and different equipment, new offices of national companies, and industry expansions and reductions. Vocational educators should have subscriptions to local and national papers and journals, and more importantly, should set aside the time to read them regularly. The major sources of forecasts and reports are summarized below.

Occupational Outlook Handbook, Bureau of Labor Statistics, U.S. Department of Labor. The Occupational Outlook Handbook (OOH) contains a comprehensive survey of all job areas and is one of the most frequently used references for obtaining forecasting information. While the handbook attempts to explain the changing nature of the labor market, it also tends to take a somewhat optimistic view of the future and tends to overstate the capacity of the U.S. Employment Service. The OOH is published every two years.

Occupational Outlook Quarterly, Bureau of Labor Statistics, U.S. Department of Labor. The Occupational Outlook Quarterly is

used to update the reports of the Occupational Outlook Handbook. This magazine contains employment information of major interest and relevance to those who advise students about the job market.

National Planning Association (NPA). NPA has projected the average annual job openings on the basis of national goals. This association analyzes the ratio of hard-to-fill jobs (unfilled for 30 days or more) to the total number of unfilled jobs over a period of time to project future average annual job openings. The linking of current and past occupational shortages to the Bureau of Labor Statistics' national outlook for these same occupations is a final step in this method of projecting labor needs. Principal limitations of this method are lack of information from employers and exclusion of wage and salary information.

Employment and Training Report of the President, U.S. Department of Labor. This yearly publication reports on labor requirements, resources, utilization, and training. It shows the national labor picture and presents trends and projections for different segments of the labor force. The Employment and Training Report of the President includes the following sections:

- The Employment Record, which is a review of employment developments and their economic background, patterns of employment growth, unemployment and underemployment, and a look to the future for labor requirements;
- Manpower Policy and Programs, which reviews the many different training programs; and
- Manpower Research and Experimentation, which reviews the different labor requirements and resources, supply and demand, and the scope of research taking place.

Dictionary of Occupational Titles, Bureau of Labor Statistics, U.S. Department of Labor. This publication provides information on the employment outlook over the next ten years. It also provides job descriptions, sources of employment, estimated earnings, working conditions, training, and other qualifications needed for each occupation listed in the directory.

State employment services. These agencies can provide information on labor trends. The information from these agencies can be compared with data from the Bureau of Labor Statis-

tics to predict local job openings and trends. Also, state employment agencies occasionally conduct surveys of employers. The data from these surveys could be very useful for making local projections.

Press, government, and private listings of employment opportunities. A valuable source of information for identifying new program areas is the employment want ads in newspapers and listings by various public and private employment agencies. Obtaining and monitoring these publicized listings over a period of time can show employment trends by pointing to areas of high employment demand and low supply.

Sources of employment information you may wish to survey include:

- newspaper(s) in your area with comprehensive listings of job vacancies;
- public employment offices in your immediate area;
- major private employment agencies within your area;
- Federal and State Civil Service, U.S. Department of Labor, and State Employment Service;
- school placement services that tally job openings; and
- major employers in your area that regularly publish lists for circulation of vacancies they wish to fill.

Conclusions

The method you select will depend on your objectives and the time, money, and resource constraints under which you must work. Usually, however, you will use a combination of methods, and this is the best approach of all. Although it may be hard to defend the time and expense required to conduct an in-depth, costly study, there should be no trouble justifying a sensible, ongoing, consistent program of predicting labor needs and opportunities. The program ideally should predict regional as well as local needs. Labor needs forecasting related to curriculum planning is obviously a continuing process and cannot be limited to a one-time "snap-shot" of the local labor market.

Individual Study Activities

1. An important aspect of collecting labor data is keeping information current. Out-of-date data are misleading and useless for planning effective curricula. To be sure that data are current, you should have a system for obtaining and analyzing professional literature and reports on a continuing basis. The following activities will help you "keep current."

   - List five professional journals that would be useful in your specialized area of vocational education.

   - List as many community groups and agencies as possible in your geographic area that can provide you with information regarding vocational education in general and your area of interest in particular.

   (Note: If you are unable to locate community groups or agencies, discuss this problem with your instructor. He or she may be able to help you locate such groups.)

2. Obtain the two required references and select additional references that cover local, state, and national data. Your instructor may suggest references or you may consult the Recommended References list at the end of this module. After you have selected the references, pick an occupation and, using that occupation as the basis for your research, complete the "Chart for Identifying and Utilizing Data" that begins on the next page.

3. Referring to the "Chart for Identifying and Utilizing Data" that you just completed for the previous activity, write answers to the questions below. These questions involve an analysis of the advantages and disadvantages of the labor information sources.

   - Which references give the most detailed information regarding the number of people needed for the occupation you selected?

   - Which references give the most detailed information regarding wages?

   - Which references give the most detailed information regarding the tasks that are involved in the occupation?

   - Which references give the most detailed information regarding educational requirements and licensing requirements?

Chart for Identifying and Utilizing Data

QUESTIONS: Answer each question below for each of the five sources.	Employment and Training Report of the President	Dictionary of Occupational Titles	Local Source	State Source	National Source
1. Does the source identify the number of persons employed by the occupation?					
2. Does the source identify related occupations in which the demand is growing and expanding?					
3. Does the source identify the related occupations in which the demand is diminishing?					
4. Does the source identify the stability of the occupation based on average annual person-hours worked (steady employment throughout the year)?					
5. Does the source project the need for this occupation five or ten years from now?					

Chart for Identifying and Utilizing Data (cont.)

QUESTIONS: Answer each question below for each of the five sources.	Employment and Training Report of the President	Dictionary of Occupational Titles	Local Source	State Source	National Source
6. Does the source identify information about wages?					
7. Does the source identify regulations regarding licensing, certification, and registration?					
8. Does the source identify the levels of education required for job entry and job advancement?					
9. Does the source identify the tasks that make up the occupation?					
10. Does the source list the probable employers?					
11. Does the source describe related occupations that can be entered?					

- Which reference could be used to summarize or develop job clusters?

- Which reference could be used to summarize or specify career ladders?

- Briefly describe the contents and how you would use each of the references below.

  (1) Employment and Training Report of the President

  (2) Dictionary of Occupational Titles

  (3) Local Source _____ (Title)

  (4) State Source _____ (Title)

  (5) National Source _____ (Title)

4. Complete all the following steps as if you were going to conduct an employer survey to determine the labor needs for a specific occupation or cluster of occupations in your local community.

   Step 1: Identify a group or committee that you could use to assist you in planning and executing a labor needs survey. You might select to involve:

   a. vocational education leaders (directors, department chairpersons, etc.) from all of the schools in the area or region to be surveyed;

   b. representatives from each of your ongoing specialized advisory committees; or

   c. representatives from all segments of the community.

   Step 2: Outline on a map the region or geographic area within which your study is to be conducted.

   Step 3: Prepare a listing of the businesses, industries, and agencies within the geographic area that you would survey.

Step 4: Determine the technique(s) that would be used for data gathering. The three most popular techniques are:

a. personal interview;

b. mail survey; or

c. telephone survey.

Step 5: From the list of organizations and agencies, select those that you would include in your survey.

Step 6: Design the survey form to be used to survey labor users and suppliers in order to obtain local labor supply and demand information.

5. Briefly describe how each of the following types of surveys is conducted.

- Employer surveys
- Econometric studies
- Job vacancy surveys
- Trends surveys

6. Briefly explain why labor needs assessment or labor needs analysis is a crucial step in the development of instructional materials for vocational education.

Discussion Questions

1. What sources of data have you found to be useful for gathering labor information? What professional journals, reports, surveys, or studies would you recommend?

2. Which approach to assessing labor needs do you think is most effective for determining:

a. national labor needs?

b. local/regional labor needs?

Group Activities

1. The class should divide into small groups according to vocational interest (home economics, distributive education, business and office occupations, trades and industry, etc.). Each group should then utilize the library to locate those sources of employment data most useful for their area of vocational concern. Sources of useful information might include journals, reports, or studies. Next, each group is to assign priorities like the following to these sources:

   - source worth subscribing to;
   - source worth reading regularly;
   - source worth reading occasionally;
   - source not worth referring to.

   Lists of sources, with the assigned priorities, should be presented to the rest of the class.

2. In small groups, identify the types of information the organizations and agencies listed below could provide vocational education program planners.

   - Census Bureau
   - Chamber of Commerce
   - Business organizations
   - Professional organizations
   - Industry
   - Military
   - Labor unions
   - Employment security
   - Conservation-environmental agencies
   - Educational institutions
   - Media (newspapers, TV, radio)
   - Recreational agencies

- Literacy, Adult Basic Education, or Right to Read Programs
- State Department of Education
- Welfare departments
- Community planners

If there are questions regarding the type of information available from one of the above sources, plan to interview persons from that organization or agency.

GOAL 3: Utilize techniques for identifying student needs.

Techniques for Identifying Student Needs

One can think of vocational curriculum planning as an attempt to balance an equation. On one side of the equation are the labor needs of business and industry. On the other side are the demands and interests of the students being served. On a continuing basis, each side of the equation should balance the other.

Most educators, however, agree that the needs of informed student populations should have priority in curriculum and program planning. The problem, then, is to define student preferences and to verify that these preferences are based on informed and realistic analysis and information.

Determining Population Preferences

Activities you might consider to obtain data on student needs are discussed below.

Monitoring phone requests and inquiries. Program inquiries and requests from students, parents, businesses, and industries are one indicator of community wants, interests, and needs regarding career preparation programs. Although such requests are not as valuable as state or national statistics that show an actual need for training, they should be considered as an additional source of information. Personnel in offices of the board of education, superintendent of schools, vocational director, admissions, counseling, community service, and placement are in an excellent position to monitor such phone calls, inquiries, or suggestions.

To collect and record program inquiries, you might follow the procedure outlined below.

- Develop a form for recording inquiries and requests.

- Distribute the record form and instructions to the supervisor of each institutional office (admissions, counseling, community service, placement, etc.) that receives calls and requests.

- Ask a sample of those who are to use the form to comment on its adequacy.

- Revise the form accordingly.

- Instruct those who are to use the form on how and when to use it.

- Periodically tabulate the results and prepare a report.

Following-up on withdrawals and dropouts. Follow-up information on withdrawals and dropouts can be the most valuable source for obtaining suggestions for modifications or additions to school programs. Early leavers should be asked why they withdrew from a career program and whether they would have remained had other program offerings been available. The techniques described below can be used when following up on withdrawals and dropouts.

- Withdrawal interview procedure.

  (1) Contact persons in your institution who will interact with students planning to withdraw or transfer to other programs.

  (2) Develop a "Withdrawal Data Form." When you select questions for the form do not overlook the possibility that you could obtain some information from school records without asking students. Eliminate the "nice-to-know" but unessential items to keep the form as short as possible. Be sure to allow space for "other comments."

  (3) Compile and analyze withdrawal interview data at the end of each semester. Report the information to the appropriate staff members.

- Dropout survey procedure. Since some students will leave your institution without formally withdrawing, this dropout survey used in conjunction with the withdrawal interviews can give you a more complete picture on why students leave your school.

(1) Identify students who left your institution, but who are not listed as formally withdrawn. Obtain a mailing address for each. This information can usually be obtained from the admission or counseling offices. The sample should include all students not enrolling for the subsequent semester but not having formally withdrawn, graduated, or transferred. In addition, you may want to limit this to formerly enrolled full-time students.

(2) Develop a survey instrument and a cover letter to be mailed to all students being surveyed.

(3) Carry out the survey. Obtaining replies from these persons is difficult; however, the responses received will add to the overall quality of your information on withdrawals.

(4) Compile and analyze data. This step should be completed after you are satisfied that you have obtained the best response level possible. Compile and report data by responses per item on the instrument. Observe particularly the frequency of responses checked or the similarity of open-ended responses.

Conducting a follow-up study of program graduates. Students who have completed programs can also be valuable sources of program-modification suggestions. These students are in a good position to assess the value of the program and the need for changes or additions. The students who are unemployed can provide useful data as to why they are not employed. The most useful information will come from those persons employed in an occupational area related to their program of studies.

Since the reactions of graduates may change as they gain more job experience, it is recommended that follow-up of graduates be repeated completely one year after graduation and again after the third and fifth years.

The following procedure may be useful:

- Identify and define the sample to be surveyed. Stratify the sample on the basis of:

  (1) program graduated from, and

  (2) year of graduation.

- Outline the key questions you want the students to answer. Key questions might include those listed below:

  (1) What is your employment status?

  (2) Are you employed in a related or an unrelated job?

  (3) What is your present salary?

  (4) What is your evaluation of the school educational program that prepared you for the job?

  (5) What is your evaluation of the school's ancillary services?

  (6) What recommendations can you make to improve the school program?

  (7) What are your present educational goals?

- Develop the survey instrument. This should be accomplished by developing survey items based on the key questions outlined above.

- Evaluate the survey instrument for the following:

  (1) Clarity--Is each item understood?

  (2) Ease of completion--Can it easily be completed?

  (3) Importance--Are only essential items related to your objectives included?

- Develop a procedure for data gathering. You might use:

  (1) personal interviews,

  (2) mail surveys, or

  (3) telephone surveys.

- Develop a letter to be sent to graduates being surveyed. The cover letter should be signed by someone known by the student, such as a teacher, department head, or counselor. The more that can be done by individual teachers and administrators to establish the value of follow-up data while a student is still

in school, the more likely it is that a good response level will be obtained. In addition, the use of a committee of presently enrolled students to assist with the survey will be helpful.

- Complete plans for the mailing and return of survey forms. The plans should include:

  (1) when the survey will be mailed,

  (2) when the thank-you reminder postcard will be mailed,

  (3) when the second cover letter will be mailed, and

  (4) provisions for contacting non-respondents via personal interview or telephone.

For more information on conducting a follow-up study, refer to the module in this series devoted to conducting follow-up studies and communicating and using evaluation results.

Conducting an interest survey. An interest survey is a valuable means for identifying how educational institutions can best serve the different members of the community. This type of survey can yield important information about students' physical characteristics, past education and employment, interests, motivation, and attitudes. When student interests are compared with the labor needs of local industry and business, important decisions can be made in vocational program planning.

The major sources of data on student demand for vocational programs are parents; high school faculty; and potential students, including recent high school graduates, employed workers, and people who are unemployed or underemployed. Education and vocational guidance counselors can frequently provide reasonably valid feedback about student interests. Industrial employment offices, Veterans Administration Offices, Vocational Rehabilitation Offices, and State Employment Security Offices also possess data on student interests obtained by using interest inventories.

It is recommended that a systematic procedure be established whereby student interest information is gathered each year from students entering high school as well as from high school seniors. It is also very important that students' parents be surveyed to identify the parents' judgments, feelings, aspirations, likes and dislikes. Some research studies show that parental aspirations are the single most important influence on what occupation a student chooses for a career.

The following procedure is intended to help you obtain data from high school students, parents, and other members of the community.

- Identify the sample to be surveyed. To assist you in the identification of target groups other than high school students, you may want to consult with the general occupational advisory committee, the State Employment Service, a Community Action Agency, and with organizations representing minority groups.

- Outline the expected outcomes of the survey and the tasks to be accomplished. This step should identify what information is needed and why it is needed.

- Determine a method of data collection. You might use:

  (1) personal interview,

  (2) mail survey,

  (3) telephone survey, or

  (4) other sources.

  If you are going to collect data from high school students and their parents, it is a good idea to have the local high schools administer, collect, and return the surveys to you.

- Develop a timetable for data collection.

- Appoint a committee to assist with the collection of data. A great deal of labor may be required to complete this activity adequately.

- Design the cover letter and survey instruments. The following data might be collected:

  (1) age

  (2) sex

  (3) present educational interests

  (4) aspirations

  (5) types of course or program interests

(6) plans for high school/post-high school (college and occupational interests beyond high school)

(7) father's and mother's occupations

(8) parents' educational background

(9) parental aspirations and preferences for son's or daughter's education and/or career status

(10) parental and student opinion concerning vocational programs

(11) parental career plans

(12) number interested in attending classes at high school, area vocational center, or junior college

Many student interest surveys are no more than interest inventories which ask students to check their career preference. When so instructed, many students select those that have the most appeal or glamour. There is not necessarily a commitment on the part of the student, and the data should be evaluated with this in mind.

- Try out the survey instruments on a small group of high school students, their parents, and the occupational advisory committee to determine if the instruments are gathering the data for which they were prepared.

- Analyze the data gathered in the pre-trial. If the instruments are gathering the intended data, they are ready for use; if not, revise survey items as necessary.

- Conduct the survey.

(1) For a mail survey, develop a schedule for sending the survey and the follow-up reminder letters.

(2) For personal interviews, you will need to develop a schedule and to train the data collectors.

(3) If guidance counselors will be administering the survey for you, you will need to reserve their time and provide them with the necessary instructions.

- Analyze and tabulate the results. To judge the validity and usefulness of the information gathered:

  (1) consider the percentage of returns from a particular group and the completeness of the information on the returns;

  (2) look carefully at the problems involved with offering the suggested program, i.e., transportation requirements and finances of low-income groups, the educational background of the suggested group, the diversity of a group interested in a particular program, scheduling problems (day, evening, part-time, full-time);

  (3) tabulate the total number of program requests, including all groups surveyed; and

  (4) calculate the types and extent of program requests made by specific groups who might be most important to serve because of their being low-income, unemployed, high school graduates, or dropouts.

Analyzing Student Preferences

When analyzing the results of any of the above techniques, it is important to verify whether students' preferences are founded on an adequate knowledge of occupational options and career possibilities. For many occupations a fairly wide communications gap seems to exist regarding job skill requirements and status and, more importantly, availability of jobs and wage-income potential. A rational choice among vocations must consider not only current employment opportunities, but also probable future developments in technology, supply and demand, income levels, requirements for retraining, and, perhaps most importantly, the "ladder relationship" of the career choice. By ladder relationship we mean the opportunity through further education and/or experience to enter another career phase in the same general discipline or career field.

Individual Study Activities

1. • Briefly describe the procedure you would follow to monitor phone requests and inquiries received by a school office regarding vocational programs.

   • Briefly describe the procedure you would follow for gathering data on student withdrawals and dropouts.

   • Briefly describe the procedure you could carry out to conduct a follow-up study of program graduates, including times when the follow-up should occur.

   • Typically the response on a mail return (postcard) survey is around 30%. What are the problems and hazards regarding assumptions based on this percentage of return?

2. This activity requires you to select one specific target population (high school students, college students, veterans, the handicapped, evening students, displaced homemakers, the retired, etc.) and carry out some of the steps involved in a student interest survey. Complete the following steps:

   • Step 1: Identify the sample to be surveyed. Some examples of groups that might be surveyed are:

     a. first-year high school students and seniors,

     b. parents of high school students,

     c. minority groups, or

     d. unemployed persons.

   • Step 2: List the questions you want to include in the survey.

   • Step 3: Determine a method of data collection. You might use:

     a. personal interview,

     b. mail survey,

     c. telephone survey, or

     d. other sources.

Discussion Questions

1. What techniques should be used for determining the interests and needs of high school students, college students, adult education students, handicapped students, veterans?

2. The follow-up survey is a traditional method of validating the effectiveness of vocational programs. High job placement and employee success rates are usually thought to verify that the vocational training was a success. What factors in the real world should be considered in addition to job placement and employee success?

Group Activities

1. In the past a frequent criticism of vocational and technical education programs was that they were developed solely to meet the needs of "the establishment" for cheap labor. It was alleged that program and curriculum development occurred in response to local business and industrial needs, not in response to the real needs of students.

   The class should divide into two groups. One group can argue that vocational education programs should be designed to meet the needs of local business and industry and the other that vocational education should be designed to meet the needs of students. Each group should present its arguments, then debate the issue.

2. Assign groups of students to prepare questions and interview individuals engaged in vocational program planning and development with various groups and agencies. The purpose of this interview will be to determine which approach and instruments these individuals are using to gather data for establishing goals and setting priorities.

GOAL 4: Utilize techniques for proposing a new or improved vocational program.

Proposing a New or Improved Vocational Education Program

Needs assessment is a costly and time consuming process. Unless comparable time and effort are expended on the data that result, the entire assessment may be wasted. After the needs assessment data are collected, they must be analyzed and interpreted. When using needs assessment data to propose a new or improved vocational education program, you should address the issues listed below.

- Provide an occupational description, rationale for the vocational program, and sources for additional information.
- Describe the employment picture related to the vocational program in question.
- Discuss the current status of the vocational program.
- Analyze the economic considerations related to the vocational program.
- Clarify the personnel considerations related to the vocational program.
- Describe the work experience considerations related to program development.
- Discuss the health and safety hazards associated with the occupation.
- Analyze union and community attitudes toward the vocational program.

Each of these issues is described in greater detail in the sections that follow.

Occupational Description and Rationale for Program

This informational statement should include the name of the proposed program and the nature of the work. It should also include estimates or recommendations on the amount of training necessary to gain entry-level competencies. Key local persons in the occupation who would be available for consultation should be listed in this section. Such a list should also include occupational organizations and employers in the district, state, or region. Finally, an explanation of the appropriateness of the proposed program to a particular school or district should be included.

The Employment Picture

This section should contain needs assessment information about employment opportunities and conditions in the service area of the proposed program, including:

- existing surveys of the employment market that relate to the specific vocational program,
- an explanation or illustration of the career ladder (or lattice) potentials of the job,
- an indication of the shortage/surplus trends in the specific occupation,
- an indication of the seasonal or fluctuating trends of the occupation, and
- an identification of the geographical areas or locations of highest employment for the occupation.

Current Status of Vocational Program

Discussed here should be the present condition of the proposed vocational program within the district. Necessary information includes:

- existing surveys or information regarding similar programs;
- a recommendation as to the most appropriate educational level for this proposed program;
- available information about success or problems in regard to the vocational program;

- existing information about enrollment, retention, and placement records; and
- information regarding exploratory or feeder programs, if any, at lower levels.

Economic Considerations

The next step in proposing a new vocational education program is a description, most often an estimate, of the cost of the program. This should include information about the following items:

- initial costs of the program (facilities, equipment, curriculum guides, etc.);
- estimated ongoing costs of the program (supplies, transportation, inservice, etc.);
- student-teacher ratio and per pupil cost of the program; and
- suggestions on how the program can be financed.

Personnel Considerations

Gather information regarding personnel--both students and professionals. Can you answer these questions?

- What indications of student interest have been demonstrated?
- What admission qualifications, if any, would be required?
- What are the characteristics of students who would be most likely to complete this program?
- Are qualified instructors available?
- What leadership is available?
- How can business and industry be involved? Three major techniques have been used by educators for involving business and industry personnel in vocational and technical education programs:

(1) the advisory committee,

(2) the school-appointed coordinator or special consultant for industry liaison, and

(3) the local trade and professional associations in the community.

Work Experience Considerations

Vocational and technical education, with its emphasis on preparation for jobs and careers in trade, industry, agriculture, business, and sub-professional fields, must plan appropriate work experience for students.

The interdependence of industry and education has been recognized throughout the history of vocational education. The effectiveness of the involvement of business and industry can well determine the practical effectiveness of the vocational education programs provided by the public schools for developing labor resources.

Crucial to the development of effective industry-education cooperation is the need to encourage organized cooperation among advisory committees and cooperative programs of vocational and technical schools within a given school system or metropolitan labor market area.

Health and Safety Considerations

Congress passed the Occupational Safety and Health Act of 1970 with the intention of reversing a rising rate of job-related deaths, injuries, and illnesses. Its implementation brought three new federal agencies into being, the Occupational Safety and Health Administration (OSHA) in the Department of Labor, the National Institute of Occupational Safety and Health (NIOSH) in the Department of Health and Human Services, and the independent Occupational Safety and Health Review Commission. These agencies have hired several thousand people to handle the research, inspections, enforcement, training, and administrative tasks entailed in improving occupational safety and health nationwide. The act provides that states may set up and enforce their own occupational safety and health plans provided these plans are "at least as active" as the federal program. State plans are submitted to OSHA for approval.

The very nature of vocational education creates problems of health and safety that need to be weighed in the planning and decision-making process. Such possible problems as hazardous equipment, toxic fumes, dangerous acids, and a host of similar or related concerns must be taken into account when making the following decisions:

- In what institutional setting should the program be located? Since the laws governing health and safety on school sites are considerably more stringent than those placed on business and industry, high schools, occupational centers, and community colleges might offer somewhat hazardous programs by using industrial facilities for the laboratory phases of the instructional program. A cogent argument for conducting instructional programs for occupations in which the health and safety problems are severe does, however, exist. The basis for this argument is that a formalized instructional program can be more effective than some of the less structured learning that exists in some industries.

  Now that 18-year-olds are classified as adults and can be legally responsible for decisions affecting their own health and safety, community colleges can offer programs whose safety factors would prevent high schools from considering them.

- If the program can be housed in a school, are the costs related to a highly hazardous instructional program prohibitive? The costs involved in establishing instructional programs with high risks to health and safety are a major determinant in whether or not a school should conduct such a program. The costs for such items as safety clothing, equipment guards, or special ventilation systems could push the program into a business or industry site under school administration.

Union and Community Attitudes

Crucial to the development and maintenance of a good vocational program is the involvement and support of the community and trade unions. This involvement is a means for developing a sense of identification on the part of representatives from all segments of the economy in the programs of, and problems of, the public schools. Only through such a partnership will schools and communities be in a position to offer purposeful, meaningful, and effective education for the world of work.

Individual Study Activity

1. The first and critical step in proposing a new or improved vocational program is to conduct a complete vocational needs assessment. The learning activities that follow are designed to guide you through some of the activities necessary for completing a needs assessment and synthesizing the information. For the purposes of these activities, select a vocational program that is of interest to you, one that will be of interest to you in the future, or one that you are currently working on. Answering the questions in this section will help you to write a comprehensive program proposal--the end result of the needs assessment process. Ask your instructor: (1) to give you a sample proposal for use in checking your answers; or (2) to review/critique your proposal to be sure you have included all the necessary parts.

   You will need to conduct some research on your own, using various sources of labor data as described earlier in this module. You may also want to use the information you collected from surveys conducted earlier in the module.

   - What is the title of the vocational program you have selected?
   - What does the worker do in this occupation?
   - How long should the training period be?
   - List key persons in the occupation (preferably those immediately available for advice and assistance).
   - What are the related occupational organizations?
   - Who are the employers?
   - Why is the program appropriate to your particular school or department at this particular time?
   - In relation to your proposed vocational program, what surveys of the employment market have been conducted?
   - Is there a shortage or surplus of workers in this occupation?
   - What are the career ladder potentials of this job?
   - Is the work seasonal?

- Does need for the occupation tend to fluctuate (e.g., as in the space industry, war industry)?
- Is employment for this occupation centered in your district?
- What surveys or information on similar programs are available?
- Is there any duplication of programs?
- What educational level is most appropriate for this program?
- What information about successes or problems is available in regard to your proposed program?
- What are the enrollment retention and placement records?
- What will the initial costs of the program be? (Include salaries of faculty and costs of equipment, curriculum guides, etc.)
- What are the estimated ongoing costs of the program (supplies, transportation, in-service training, etc.)?
- What is the estimated student-teacher ratio?
- What is the estimated per-pupil cost of the program?
- How can the program be financed?
- How many students have shown an interest in the program?
- Are there student entry requirements?
- What are the characteristics of students who are likely to be interested in completing this program?
- Who is qualified to teach this program?
- What is the lecture-laboratory ratio?
- What work experience is required for this occupation?
- What work experience opportunities are available in the district?

- What opportunities are available for a cooperative education program?
- List all the health and safety hazards associated with the particular occupation.
- What unions are associated with this occupation?
- What position do the unions take in regard to vocational training for this occupation?
- What evidence is there of community approval or disapproval of the program?

Discussion Questions

1. What is meant by "seasonal" and "fluctuating" occupations? (Consider agriculture, space industries, and war industries.)
2. Discuss some of the concerns related to the educational level at which to propose a new vocational program? How should high school programs differ from community college programs and area vocational school programs? How is duplication of programs prevented?
3. What are the effects of union quotas and restrictive apprentice practices on school preparatory programs?
4. What are union policies regarding school-produced goods and services?
5. Describe your personal experiences with health and safety regulations in vocational training settings. For example, some vocational teachers must constantly be aware of hazards due to machinery; others due to environmental conditions. Are there any settings in which there are no health and safety hazards?

Group Activity

1. Work with other students to analyze the following position statement. Be sure to discuss the following points:
   - Which employment statistics are emphasized?
   - What rationale is given for using labor data?

- What are the implications of this report for vocational education program planning?

Position Statement

While concern and emphasis in vocational education have turned toward student needs, planning and management ultimately must make reference to the job and industry trends in California. California needs about 500,000 new workers each year. Vocational completions in the state approximate 175,000 persons yearly from high school and community college programs. The "planning gap" offers an opportunity for vocational education to expand its programs.

In the past California has lacked statewide, regional, and often local labor data for guiding resource allocations in starting new programs or closing old ones. Local labor data were and are obtained program by program from industry advisory committees and, infrequently, by countywide surveys.

Data collected reveal past and projected employment distributed according to major occupation and industry categories, with further detail on the manufacturing and service sectors. For vocational education, a most important trend is the shift in employment from manufacturing to the service sector. The percentage of California employment in manufacturing shrank from 25% of the total in 1960 to about 20% of the total in 1975. During the same period the service sector grew from 25% to about 32% of the total employed in California. The proportion of white-collar workers as a percentage of the total labor force grew to 56% by 1975 from 1960's 51.5% with most of the increase (13.7% to 17.2%) accounted for by professional and technical workers. The services industry has grown most rapidly, and among the service workers, health and education are the two fastest growing employment sectors.

From the point of view of occupations, five of the eight major groups each comprised between 11% and 16% of the total in 1960. These are:

a. clerical and kindred workers

b. operatives and kindred workers

c. craftsworkers and kindred workers

d. professional, technical, and kindred workers

e. managers, officials, and proprietors

These data provide the State Board with one important checkpoint for allocating resources to vocational programs. Wide distribution of this information will allow districts and areas to use the data in conjunction with the labor requirements of their locale and as a crucial part of the career information and guidance subsystem. The State Department of Education may then analyze the distribution of its funding against the overall state economic needs as one method of management control and planning. This is not meant to suggest that a strict uniformity to the proportion of each industry and each occupation is the proper allocation. Costs, benefits, growth rates, student needs, employee turnover rates, area and local economic conditions, and other factors should be analyzed in conjunction with these data.

The State Board must arrange for systematic and periodic collection of labor data for use by state, area, and county levels of vocational educators and planners. Although projections have been called for under the law in the past, the state agencies with the technical capability to carry out the task have not been funded. If, at the end of the current fiscal year, a project is not underway to make the necessary study on a yearly basis, the State Department of Education should request funds and personnel to undertake the work.

Summary

In this module you learned about the vocational needs assessment process and its relationship to curriculum development. You learned that planning vocational education programs should be the result of a careful and continual analysis of the needs of labor and the needs of the students who will fill the available jobs. Too often students are left to find jobs that no longer exist or for which there is a decreasing demand because someone failed to study the projected labor needs of society. You also learned how the information from a needs assessment is used to propose a new or improved vocational program.

Concluding Activity

1. In groups of three to six students,* summarize the major findings from the six data forms listed below and reprinted on the following pages.

   - Aurora Demographic Information
   - Regional, Average Annual Occupational Demand for Ten Job Groups
   - Vocational Interest of High School Students and Adults in Aurora
   - Aurora Student Needs Surveys
   - Prioritized List of Educational Goals from Aurora Community Survey
   - Description of Vocational Facilities and Programs--City of Aurora

2. Analyze and discuss the interrelationships of your summarized findings.

3. State implications regarding curriculum change in the vocational programs.

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* This activity is primarily designed as a group activity, since the analysis of needs assessment data is traditionally a group process. If necessary, however, the activity could be completed by individuals.

4. Outline the format and subject matter of a report to be submitted to the school board recommending vocational changes based on the given needs assessment information.

5. Compare results with other groups as a source of class discussion and conclusions.

Aurora Demographic Information

Aurora, a community of approximately 5,000 population, is located 35 miles from Duborg (population 181,000). Aurora has grown steadily in recent years due to the number of families who have moved out of the urban population center. Aurora has attracted two national retail franchise headquarters and a major shopping mall.

The area surrounding Aurora has traditionally been agricultural. However, during the past five years much of the surrounding land has been purchased for housing and commercial use. The population is described as being principally middle and lower middle class. The mean educational attainment is 12.2 years.

Regional, Average Annual Occupational Demand* for Ten Job Groups

	JOB GROUP	DEMAND
1.	Clerical Occupations	High
2.	Sales Occupations	High
3.	Food Services Occupations	Medium
4.	Personal Service Occupations	Medium
5.	Protective and Building Services Occupations	Medium
6.	Craft Occupations	Medium
7.	Transportation and Utilities Occupations	Low
8.	Extractive Industry Occupations	Low
9.	Manufacturing Processing Occupations	Low
10.	Material Handling Occupations	Medium

*Average Annual Occupational Demand refers to the number of positions available due to growth of the occupation and to employee turnover.

Vocational Interest of High School Students and Adults in Aurora

POPULATION	STUDENTS	ADULTS
Want job training	30%	15%
Do not want job training	70%	85%
JOB GROUP		
1. Clerical Occupations (secretaries, clerk-typists, bookkeepers, bank tellers, telephone operators)	8.0	2.3
2. Sales Occupations (apparel, transportation, equipment, and miscellaneous salespeople)	4.3	3.1
3. Food Service Occupations (waiter, waitress, bartender, meatcutters, cooks, etc.)	2.7	1.3
4. Personal Service Occupations (hotel/hospital maids, barbers and beauticians, laundering occupations)	1.8	.7
5. Protective and Building Service Occupations (guards, firefighters, police officers, janitors, grounds keepers)	2.2	1.8
6. Craft Occupations (auto mechanic, other mechanics, carpenters, sheet metal workers, electrical workers, plumbers)	3.7	1.8
7. Transportation and Utilities Occupations (truck drivers, service station attendants, telephone repair, utilities production)	3.0	1.0
8. Extractive Industry Occupations (forestry occupations, logging occupations)	1.3	.8
9. Manufacturing Processing Occupations (wood processing occupations, food processing, ore and metal processing, chemicals and fuels processing, textile processing)	2.0	1.2
10. Material Handling Occupations (packaging occupations, housing and conveying, moving and storing, miscellaneous material handling)	1.0	.8

Aurora Student Needs Surveys

1. Follow-up Study (classes from last year and two, four, six, and eight years ago)

This study, conducted last summer, dealt with dropouts and with a ten percent (10%) random sample of graduates from the classes listed above. The study involved two phases: (1) a records search and (2) a survey of facts and opinions. Data from this study are as follows:

a. Twenty-one percent (21%) of the former students who responded said that teachers are seldom or never concerned with them as individuals. These respondents apparently felt that a communications gap existed.

b. Family problems and school problems were two of the three most often listed reasons for dropping out of school. (Marriage was not defined on a statistical basis and may have been quite varied, but the fact that so many dropouts marked these two points indicates that a breakdown in parent/student/teacher rapport is a critical factor in the dropout problem.)

c. Former students showed a marked preference for "skills" over "content" courses. They listed English, math, typing, home economics, and speech most often as being "most useful" courses. Biology and history (both required content courses) were singled out most often as being least useful, along with foreign language.

These former students seemed to be saying that they gained more from "relevant skills courses" than from ones that gave them ready-made information and opinions.

d. Several spontaneous comments (at least 50) stated or implied that the schools need to do more to prepare students to function better in the "adult world." (The specific content of these comments was quite varied, of course.)

2. Needs Studies Conducted in Conjunction with This and Related Studies

a. Student Questionnaire: A random sample (147 students) of present students responded to the following questions:

(1) My parents take an active interest in my school affairs (school work, social activities).

36%	a.	Most of the time	27%	c.	Sometimes
19%	b.	Often	18%	d.	Seldom

(2) Faculty members take an active personal interest in me.

19%	a.	Most of the time	40%	c.	Sometimes
19%	b.	Often	22%	d.	Seldom

(3) Other adults in the community take an active, personal interest in me.

6%	a.	Most of the time	44%	c.	Sometimes
20%	b.	Often	30%	d.	Seldom

(4) I take part in the activities of my classes (class discussions, presentations).

30%	a.	Most of the time	29%	c.	Sometimes
30%	b.	Often	11%	d.	Seldom

(5) I take part in the school activity program (drama, sports, journalism, clubs).

23%	a.	Most of the time	23%	c.	Sometimes
24%	b.	Often	30%	d.	Seldom

(6) The students in this school (excluding personal friends) are friendly.

31%	a.	Most of the time	32%	c.	Sometimes
24%	b.	Often	13%	d.	Seldom

(7) I would like to participate in making important group decisions (setting class rules, school rules, club rules, etc.) more often than I presently do.

80%	a.	Yes	12%	b.	Neutral	8%	c.	No

b. Student/Faculty/Patron Structured Interviews: Structured interviews with twenty-four arbitrarily chosen high school students, nine arbitrarily chosen junior high school students, fifteen arbitrarily chosen teachers, and ten arbitrarily chosen patrons were conducted. Following are the percentage responses to the questions asked:

	Students		Teachers		Patrons	
	Yes	No	Yes	No	Yes	No
(1) Should community members be involved in planning and executing educational programs?	82	18	72	28	70	30
(2) Should students have a greater number of educational experiences in the community than they now do?	76	24	86	14	60	40
(3) Is a lack of community involvement a serious educational problem?	82	18	72	28	60	40
(4) Should education be made relevant by centering educational experiences in the community?	82	18	86	14	60	40

c. Faculty Questionnaire. Teachers on the faculty were asked to respond to the following questions. Thirty-nine (39) responded.

(1) The number of parents who, in the past term, have visited my classroom during normal class activities is nearest to:

87% a. 0 11% b. 5 2% c. 10
___ d. 25 ___ e. 50 ___ f. over 50

(2) Of the parents who should have contacted me last semester concerning their youngster's educational progress, the percent who actually did is nearest to:

47% a. 0% 39% b. 5% 10% c. 10% ___ d. 25%
4% e. 50% ___ f. 75% ___ g. 100%

(3) The percent of students who participate actively in my classes (take part in class discussion, make presentations, hand in their assignments without pressure) is nearest to:

	a. 0%	5%	b. 5%		c. 10%	5%	d. 25%
31%	e. 50%	50%	f. 75%	9%	g. 100%		

(4) The percent of students in my classes who are presently functioning as relatively effective independent, self-directed learners is nearest to:

	a. 0%	13%	b. 5%	13%	c. 10%	23%	d. 25%
20%	e. 50%	29%	f. 75%	2%	g. 100%		

(5) The percent of students in my classes who are capable of functioning as relatively effective independent, self-directed learners is nearest to:

	a. 0%		b. 5%	11%	c. 10%	17%	d. 25%
25%	e. 50%	39%	f. 75%	8%	g. 100%		

Prioritized List of Educational Goals from Aurora Community Survey

Goals in order of descending priority:

1. Develop skills in reading, writing, speaking, and listening
2. Develop good character and self-respect
3. Develop skills to enter a specific field of work
4. Gain a general education
5. Develop a desire for learning now and in the future
6. Develop pride in work and a feeling of self-worth
7. Learn how to examine and use information
8. Gain information needed to make job selection
9. Learn how to use leisure time
10. Appreciate culture and beauty in the world
11. Practice and understand the ideas of health and safety

Description of Vocational Facilities and Programs
City of Aurora

High School

Facilities

Four-year high school for 500 students

Programs:	Length	Enrollment
Typing and Shorthand	36 wks	18
Bookkeeping	"	15
Intro. to Agriculture	"	16
Crop and Soil Technology	"	14
Animal Husbandry	"	14
Family Living	"	15
Consumer Homemaking	"	16

Community College

Facilities

School is a remodeled military base

Total enrollment (day and evening classes) 1000

Program	Length	Enrollment
Auto Mechanics	12 mo.	20
Assoc. Degree Nurse	24 mo.	15
Nurse Aide	2 mo.	20
Secretarial	4 mo.	20

Carrier Project

This activity is called a "Carrier Project" because it begins in this module and carries over to other modules. It is a curriculum development project that is to be as realistic as possible. In this project, you will plan curriculum materials and develop a curriculum guide that you can use in your own professional position. You are to work on the project as you progress through this module and the modules on conducting task analyses and developing instructional objectives, selecting instructional strategies and assessing student achievement, and selecting and preparing instructional materials.

The course, unit of a course, or short training session you select to develop for this project may be a vocational course for any level. For example: an agribusiness course at the high school level; a technical institute course in electronics; an interdisciplinary course in consumer education for an adult and continuing education program; an inservice series for midmanagers; or an intensive refresher course for medical technicians. Those who have had experience as teacher educators may choose to develop a course or unit for a teacher education program. Once you have selected your project and received approval from your instructor, follow these steps:

- Describe briefly the setting and target population of the instructional plan to be developed.
- Develop goals for your course or unit based on the discrepancy between what is and what you would like to see in your course or unit area.
- Conduct a task analysis related to your course or unit.
- Write the instructional objectives of the course or unit in behavioral terms.
- Develop a course outline that includes course goals, unit or lesson titles, instructional objectives for each unit or lesson, and the learning activities.

The Carrier Project will be evaluated using the following criteria:

EVALUATIVE CRITERIA FOR CARRIER PROJECT

Criteria	Contained in Curriculum Guide: Yes	No/Not included	Needs improvement
I. PROGRAM GOALS:			
Consistent with needs (student and employment)			
Goals established			
Behavioral objectives designed to meet goals			
Consistent with level and abilities of students			
Attitudes, knowledge, and skills relevant to job			
Feasible within time and budget			
Statements clear and understandable to students, teachers, administrators			
Establishes learning directions and emphases			
Consistent with stated philosophy			
Consistent with available resources			
Describes terminal behavior			
II. CONTENT (CURRICULUM):			
Task analysis accomplished			
Course outline completed			
Clearly relates to course goals			
Valid, up-to-date materials			
Includes general principles as opposed to facts			
III. LEARNING ACTIVITIES:			
Safe with adequate supervision			
Effective for meeting objectives			
Variety for student interest			
Balance in modes of learning			
Flexible to meet student needs			
Consistent with "real-world" activities			
Organized in logical progression			
Flexible in school setting			

APPENDICES

Individual Study Activity Responses

The answers that follow will give you an idea of the type of response expected. Use them as a study tool if you wish.

GOAL 1

1. Response will depend on your own experiences in vocational education.

GOAL 2

1. • The specific response to this activity depends on your specific field of vocational education. Regardless, you should probably include some general vocational education journals such as VocEd, the journal of the American Vocational Association.

   • The specific response to this activity depends on your area of specialization. Regardless, you should most likely include the Chamber of Commerce and the State Employment Department.

2. The specific response to this activity depends on the particular occupation you selected.

3. The specific answers to these questions depend on the resources that you selected for Activity 2.

4. The specific response to this activity depends on the labor needs of your local community.

5. a. Employer survey - a survey in which forms are sent to employers in the local area requesting them to answer questions related to their labor needs, entry-level requirements, training opportunities, etc.

   b. Econometric study - a sophisticated survey to determine long-term predictions of labor needs. The statistics are gathered, updated, and studied by the Bureau of Labor Statistics.

   c. Job vacancy survey - a study that compares local job vacancies with national labor needs to determine priority jobs needing trained personnel. The vocational curriculum specialist can compare local job vacancy rates to national trends.

d. Trends survey - a survey technique that attempts to forecast future labor needs by studying past labor needs and supply. Because technology and industry change so quickly, past trends are not always a dependable guide for future planning, so this method is not recommended.

6. The assessment of labor needs is a crucial step in the development of instructional materials because this assessment informs program developers of the need for teaching specific tasks and job skills. Where there are labor needs, skills can be taught; where there is an oversupply of labor, training can be eliminated. The assessment encourages the efficient use of money, time, and effort.

GOAL 3

1. • A procedure to monitor phone requests and inquiries should include the following steps:

(1) Develop a form for recording inquiries and requests.

(2) Distribute the form to those who receive the calls--counselors, teachers, and administrators.

(3) Instruct them on how to use the form and what information to collect.

(4) Periodically tabulate the results and prepare a report.

• A procedure for gathering data on student withdrawals and dropouts should include the following steps:

(1) Develop a form for interviewing students.

(2) Inform those who will be in contact with the dropouts.

(3) Analyze the interview data at the end of each semester.

• A procedure for gathering data on student graduates should include the following steps:

(1) Develop a form for surveying graduates.

(2) Survey the graduates one, three, and five years after graduation.

(3) Compile and analyze the data.

- When less than 50% of the survey forms are returned, the responses do not always represent the views of the entire group.

2. The specific response to this activity depends on the characteristics of the target population you selected to study. You should, however, have:

   - identified a specific target population;
   - listed the questions for which you wanted answers; and
   - decided which method of data collection would be most appropriate.

GOAL 4

1. Consult the proposal given to you by your instructor; or ask your instructor to review/critique your proposal.

Self-Check

GOAL 1

1. The best definition of educational needs assessment is:

   a. a systematic method of solving problems related to students and society.

   b. a way of determining what students, parents, and school officials want from the educational institution.

   c. a process of defining a school district's educational philosophy through cooperation of the community and the school.

   d. a method of determining the difference between current educational outcomes and desired outcomes.

   e. a process designed to measure the degree to which an educational program has been implemented.

2. What are two components of a total vocational needs assessment?

3. In general, the scope of vocational needs assessment can best be described as:

   a. varying in accordance with the scope of vocational programming.

   b. broad, to encompass an entire state or region.

   c. narrow, covering a school district.

   d. varying in accordance with the vocational discipline under consideration.

   e. broad, to include all districts and all vocational areas.

4. Describe the type of information that can be found in the Dictionary of Occupational Titles.

5. Describe the type of information that can be found in the Employment and Training Report of the President.

6. List three sources of employment statistics that can be used for planning vocational education programs. After you list the three sources, briefly describe their contents and how you would use them.

GOAL 2

1. What is the purpose of conducting a labor needs analysis before developing educational programs?

2. Describe how employer surveys are conducted and used in vocational education.

3. Describe how econometric studies are conducted and used in vocational education.

4. Describe how extrapolations of trends surveys are conducted and used in vocational education.

GOAL 3

1. Why are student needs analyses important to consider when developing instructional programs?

2. There are several ways to obtain and assess population or labor supply information. List and describe at least three ways to determine population interests and needs.

3. Describe how to conduct an interest survey to determine student vocational interests.

GOAL 4

1. What are two important considerations in describing the employment picture for a particular vocational program?

2. What are two important considerations in describing the current status of a vocational program?

3. What are two important considerations in describing funding possibilities for a vocational program?

4. What are two important things to know about personnel when initiating a new vocational program?

5. What work experience considerations should be made in developing plans for a vocational program?

Self-Check Responses

The answers that follow will give you an idea of the type of response expected. Use them as a study tool if you wish.

GOAL 1

1. d

2. • assessment of labor needs

   • assessment of student needs

3. a

4. The Dictionary of Occupational Titles describes most common jobs in the United States. Job descriptions include a description of the tasks that make up the job, training requirements, approximate income, and the future need for trained employees.

5. The Employment and Training Report of the President describes the economic characteristics of labor supply and needs in the United States. It projects future needs for occupations, examines trends in the economy, and discusses executive plans for solving present and potential problems.

6. The specific responses to this question depend on the particular sources students select.

GOAL 2

1. A labor needs analysis provides the vocational planner with the necessary data for deciding which skills should be taught to meet employers' needs for trained personnel. If programs are based on reliable data, students can be fairly certain to find jobs at graduation.

2. Employer surveys are used to determine which jobs are expanding and will provide openings for trained personnel. Employers are contacted, questioned about their employment needs at present and in the future, asked to specify the skills required for entry-level jobs, and asked to predict their future need for and interest in vocational training programs.

3. Econometric studies are conducted by economists on the federal or state level to determine employment and labor trends. Extensive surveys are conducted to gather reliable data that can be used as a basis for economic planning.

4. Extrapolation of trends surveys attempt to forecast future needs on the basis of past trends. Because of rapid technological change and changing industry needs, this survey technique is not highly recommended for vocational education planning.

GOAL 3

1. Student needs data show what interests and skills potential students have. By comparing these data to labor or employer demand data, vocational curriculum specialists can bridge the gap between the two. Ideally, the needs of informed students will equal the labor or employer demands.

2.
- Monitor phone or mail requests for vocational programs.
- Follow up on students who have dropped out of programs.
- Follow up on students who have graduated from programs.

3. The following steps should be mentioned:
- Identify the sample to be surveyed.
- Outline the expected outcomes of the survey.
- Decide on the method of data collection: for example, personal interview, mail survey, or telephone survey.
- Develop a timetable for data collection.
- Appoint a committee to assist with data collection.
- Select the students to be surveyed.
- Design the survey forms.
- Try out the survey forms.
- Analyze the data and revise forms as necessary.
- Conduct the survey.
- Analyze and tabulate the results.

GOAL 4

1. • current surveys of employment market
   • shortage or surplus of workers
   • seasonal or fluctuating characteristics of the work
   • placement opportunities
   • career ladder/lattice opportunities
2. • surveys or information regarding similar programs
   • duplication of programs
   • appropriate educational level
   • information about successes or problems
   • enrollment and placement records
3. • initial costs
   • ongoing costs
   • student-teacher ratio
   • per pupil cost
   • funding resources
4. • how much student interest
   • student requirements and abilities
   • teacher/instructor qualifications and availability
   • characteristics of students
5. • work experience requirements for competing for a job
   • number and kind of work experience opportunities
   • location of work experience opportunities

Recommended References

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VECS Module Titles

Module 1: Vocational Educators and Curriculum Management

Module 2: The Scope of Vocational Education

Module 3: Organization of Vocational Education

Module 4: Legislative Mandates for Vocational Education

Module 5: Priorities in Vocational Education

Module 6: Vocational Education for Students with Special Needs

Module 7: Vocational Needs Assessment and Curriculum Development

Module 8: Conducting Task Analyses and Developing Instructional Objectives

Module 9: Selecting Instructional Strategies and Assessing Student Achievement

Module 10: Relating Learning Differences and Instructional Methods

Module 11: Selecting and Preparing Instructional Materials

Module 12: Evaluating Vocational Education Curricula

Module 13: Conducting Follow-Up Studies and Communicating Evaluation Results

Module 14: Managing Vocational Education Programs

Module 15: Preparing for Curriculum Change

Module 16: Staff Development